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GEOGRAPHIC SCHOOL BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated as a non-commercial institution for the increase of geographic knowledge and its popular diffusion. General Headquarters, Washington, D. C.)

November 6, 1944. Vol. XXIII. No. 6.

1. New War Chapter Opens in the Philippines

2. Hungary Has Valuable Resources, Violent History

3. Formosa, Japan's Has-Been Pantry and Arsenal

4. Cork's Role in American Life Important in War and Peace

5. Geo-Graphic Brevities: Geographic Award—Shale Oil

OLD HUNGARY HAS TROUBLES ENOUGH TO TELL THE RISING GENERATION

In the life span of this Hungarian grandfather his people have experienced war, uprisings, and political mistakes that have brought national tribulation, such as the country's alliance with the Axis.

The grandfather is typical of the Magyars, who comprise about 75 per cent of Hungary's population. Of Asiatic origin, their ancestors pushed westward into Hungary more than 1,000 years ago, looking for greener pastures for their horses and cattle. Famous breeds of horses are still raised on the Hungarian plains.

The Magyar topcoat is a giant creation of felt, decorated with embroidery and leather appliqué. For warmth it may be supplemented with a sheepskin coat worn with the wool inside. The traditional costume calls for skirts for men.

Little girls are miniatures of their mothers, with long skirts and many ruffled petticoats in rural Hungary (Bulletin No. 2).

Hungarian Press Photographic Exchange

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HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic School Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents (stamps or money order); in Canada, 50 cents. Originally entered as second-class matter January 27, 1922; re-entered as of April 27, 1943, Post Office, Washington, D. C., under Act of March 3, 1879. **Copyright, 1944, by National Geographic Society, Washington, D. C. International copyright secured. All rights reserved. Quedan reservados todos los derechos.**

New War Chapter Opens in the Philippines

NEW island battlefields are going down in history in the Philippines, on the credit side now, to balance Bataan and Corregidor. And a new chapter is opening in the history of that Pacific island group.

When the United States won the Philippines from Spain, in 1898-99, many Americans had to get out their atlases to locate the new islands. They learned that the Philippines were more than 6,650 miles from San Francisco; that their conquest and $20,000,000 purchase price had extended the territorial arm of the United States to a spot only 335 miles from China, and 1,500 miles from Tokyo.

6,500 Islands Are Smaller than One Square Mile Each

Forty-three years after United States adoption of the islands Philippine maps were again in demand. This time they were used to identify Manila and its naval base at Cavite, then embattled Bataan and Corregidor, as headlines told of the Japanese attack and the heroic resistance of Americans and Filipinos.

The Philippines include more than 7,000 islands. Fewer than 500 are more than one square mile in extent. The two largest, Luzon and Mindanao, roughly equal in size Kentucky and Indiana. The entire group has an area of over 115,000 square miles—a region of luxuriant tropical vegetation with mountains (many of them active volcanoes) reaching up 7,800 feet (illustration, next page).

Island resources include forest products and such war-useful minerals as iron, chromium, copper, manganese, and gold. They produced for export sugar, tobacco, copra, and abacá (so-called Manila hemp), and rice, corn, vegetables, and other food supplies for home consumption.

The capital and chief commercial and industrial city, Manila, had a prewar population of 673,000. Other important ports include Cebu on the island of the same name, Zamboanga and Davao on Mindanao, and Iloilo on Panay.

Americans Brought Changes

The 1941 population of the islands was estimated at nearly 17,000,000. Tagalog and Visayan are leading languages. Educated Filipinos also speak Spanish. English is in widespread use. Before the war it was official in schools and government.

The native population is diverse in racial traits, religions, and customs. The Filipinos (slight, with brownish-yellow skin and straight black hair) form the most numerous and, normally, the ruling group. An Indonesian people, scattered chiefly through the central lowlands, they are largely Christianized.

Mixed blood is common in the Philippines. The late president, Manuel Quezon, was half Spanish. His successor, Sergio Osmena, is partly of Chinese ancestry. The Chinese are another important racial element in the islands.

Outstanding among the primitive tribes are the Igorots, warlike pagans of mountainous Luzon, with an old reputation for headhunting, and the Mohammedan Moros of Mindanao and near-by islands, who, after defying Spanish conquest, resisted American domination for years. Less numerous are the Negritos, who were probably the earliest immigrants to the islands. These pygmy blacks are a timid people who live chiefly in the forests of Luzon and some of the smaller islands.

American control brought striking changes in Philippine life, although the

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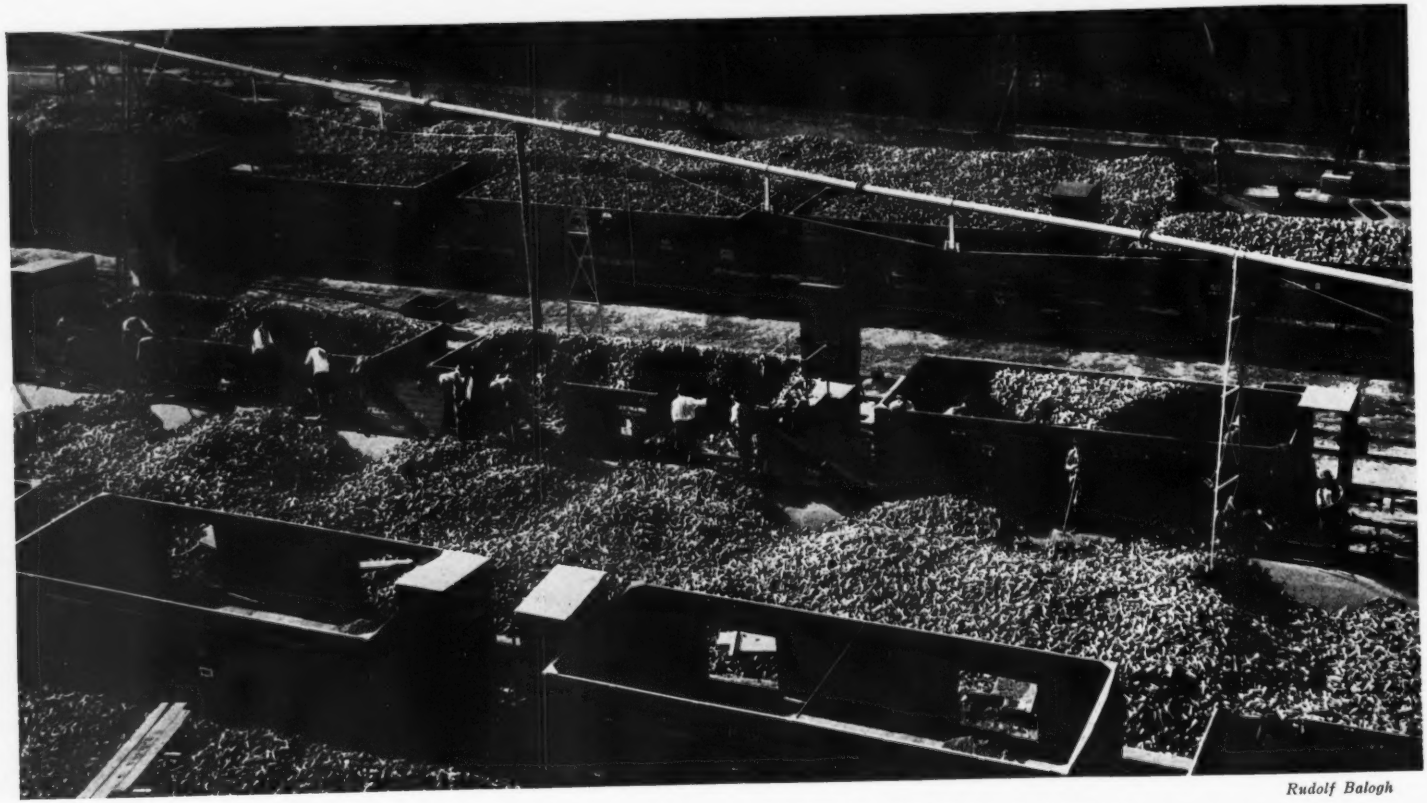

Rudolf Balogh

CARLOADS OF SUGAR BEETS SWEETEN THE DIET OF MAN AND BEAST IN HUNGARY

Along with crops of rye and tobacco, western Hungary yields tons of silvery sugar beets. The beets grow in neat rows, cultivated on most estates by women using crude hand implements. By the trainload the beet crop reaches mill towns such as Hatvan, northeast of Budapest, where men with pitchforks empty the cars. To make sugar, the beets are soaked in hot water; the beet juice is processed with carbon dioxide and lime, filtered, then evaporated into sugar crystals. The left-over pulp of the beets serves as cattle feed for Hungary's extensive herds, one of the nation's important food resources (Bulletin No. 2).

bound for the summit.

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General Headquarters, Washington, D. C.

Hungary Has Valuable Resources, Violent History

THE civil war that followed Russian invasion of Hungary deprived Nazi Germany of its last voluntary European Axis partner. A member of the Axis since 1940, Hungary has been a source of both material resources and political unrest.

The resources include extensive food supplies, hides for leather, timber, and valuable minerals. The unrest was the result of Hungary's demands for territories lost in World War I.

Recovered Lost Lands from New Nations

Before that war, Hungary was the eastern half of the dual Austro-Hungarian Empire. The nation had a population then of more than 20,000,000, and an area of over 125,000 square miles (larger than that of New Mexico). After the war, territorial changes called for in the peace treaties took away about two-thirds of Hungary's area. Most of it went into the creation of the new independent states of Czechoslovakia and Yugoslavia and to the enlargement of Romania.

Defeated Hungary protested vigorously against the new boundaries. In maps and speeches, stamps and slogans, a continuous campaign reminded its citizens of the country's former size.

Through playing ball with the Axis, Hungary recovered much of the lost territory. The break-up of Czechoslovakia in 1938-39, in 1940 the return of part of Transylvania from Romania, and in 1941 the occupation of border lands inside Yugoslavia all contributed. By 1942 Hungary had achieved an estimated area of nearly 66,550 square miles. The population approached 15,000,000 people. But with the regained holdings came the old problem of rebellious minorities.

Oil Has Been a New Development for Hungary

The greatest wealth of Hungary is rooted in the fertile soil of the plains that form most of the country. The leading crops are wheat, corn, rye, sugar beets (illustration, inside cover), potatoes, and fruits. Poultry and livestock, and the rich fishing preserves along the Danube and big Balaton Lake, contributed to Hungary's value as a larder for Axis countries on a blockaded continent.

Germany, even in prewar times, was by far the chief nation in Hungarian trade. Italy was second.

Coal and bauxite, the ore from which aluminum comes, have been Hungary's big mineral assets. When Hungary took over northern Transylvania from Romania, in 1940, the mines in that territory added lead, zinc, copper, sulphur, salt, gold, silver, and wells gave natural gas.

The production and processing of petroleum in fairly large quantities is a recent development in Hungary. The oil output jumped nearly twenty times between 1937 and 1938, and is believed to have been pushed much higher since. The importance of the production has been indicated by the news of frequent Allied bombings of the oil fields.

The Carpathian and Transylvanian mountain ranges provide natural boundary markers along the northern border of the nation. To the south, Hungary is largely an open plain, broken by two great river systems, the Danube and the Tisza. The Danube, which flows first east, then south, through the west-central stretches of Hungary, is a historic route into the heart of Europe.

Budapest on the Danube, the country's historic capital, is a city of 1,500,000

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nipa hut and water buffalo remained. Pure water was introduced to towns and villages; Manila, once called a "cesspool of disease," was cleaned up. Smallpox, cholera, leprosy, bubonic plague were brought under control. Railways and roads were built and ports improved. A school system was set up, with vocational training stressed. American dress, customs, and slang were widely adopted.

The Philippines claimed the highest standard of living in the Far East. In 1939 the islands were fifth among purchasers of U. S. goods. They bought automobiles, machinery, and electrical goods. From the Philippines Uncle Sam bought more than he sold—abacá, chromium, dyewoods, sugar, tobacco, and copra.

Under American rule the islands had a large measure of self-government. The United States retained certain responsibilities in the realms of finance, foreign relations, immigration, and defense. In 1935 the islands became a commonwealth, with president and National Assembly. Complete independence was promised in 1946, although many students of Philippine-American relations foresaw grave disadvantages, such as loss of free trade with the United States.

Note: The Philippine Islands appear on the National Geographic Society's Map of Southeast Asia, a supplement to the October, 1944, issue of the *National Geographic Magazine*. Large-scale insets show the districts around Manila on Luzon, and Davao on Mindanao. A price list of maps may be obtained from the Society's headquarters, Washington 6, D. C.

See also "Mindanao, on the Road to Tokyo," and the series of 12 natural color photographs, "Camera Cruising in the Philippines," in the November, 1944, issue of the *Magazine*; "Facts about the Philippines," February, 1942*; and "Return to Manila," October, 1940*. *(Issues marked with an asterisk are included in a special list of Magazines available in lots of ten for $1.00 to teachers and librarians. A copy of the list will be sent on request.)*

Bulletin No. 1, November 6, 1944.

J. Baylor Roberts

THE TOP OF THE PHILIPPINES IS NO PLACE FOR TWO-WAY TRAFFIC

The tropical Philippines have their "pantry-shelf roads" like those of the temperate northwestern United States. Rocky ledges blasted from the steep slopes of the islands' mountains make breathtaking highways which corkscrew up to cold altitudes. Only scraggy pine trees and stunted shrubs will grow there. This automobile stops to get its breath on the tip top of the Philippines (sign, background), 7,800 feet above sea level, in the mountains of Luzon near Baguio. The cool air in these mountains made Baguio a "summer" capital to which, before the Jap invasion, the government was moved to escape Manila's heat. A block signal system is necessary to make sure that a car descending this road does not come radiator to radiator with one bound for the summit.

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Formosa, Japan's Has-Been Pantry and Arsenal

WITH the repeated attacks of U. S. planes on Japan's island colony of Formosa (Taiwan), war on wings has moved to within three hours of the main islands of Japan proper and has crippled the colony's usefulness.

Together with the Ryukyu Islands, Formosa forms a southern extension for the Japanese archipelago. Luzon, northernmost large island of the Philippines, is 220 miles to the south.

Serving Japan as a source of food supplies, Formosa is of even more value as a post from which to control shipping between the home islands and Japan's stolen empire in southeast Asia. As part of the war program, Japan made Formosa into a huge arsenal. Its ports were fortified to protect shipyards, air bases, naval stations, and supply depots.

Monsoons and Earthquakes Drench and Shake Formosa

Formosa lies 100 miles off the eastern coast of China. Roughly oblong in shape, it is some 245 miles long and about 88 miles across at its widest point. Its area of nearly 14,000 square miles—equaling that of Massachusetts, Connecticut, and Rhode Island combined—supported a prewar population of more than 5,000,000. Most of the people are of Chinese ancestry.

Formosa's climate is marked by variety. The Tropic of Cancer bisects the island, and climatic differences between north and south are quite pronounced. For example, Taihoku, capital of the island, at its northern tip, has cool rains for over half the year; in the south a warm rainy season lasts for more than three months. The northeast monsoons sweep over Formosa between November and April. Earthquakes shake the island or adjacent seas on an average of nearly one a day.

Extending the length of the east coast is a range of mountains whose splendor inspired Portuguese sailors of the 16th century to call the island *Ilha Formosa* ("beautiful island"). These mountains, rising to heights of over 14,000 feet, have greatly affected Formosa's development. They temper the climate. They have left the rocky eastern coast so few advantages for settlement that its towns are small and far apart. The important cities are in the west and north. Descending in some places in precipitous cliffs to the sea, the mountains block invasion from the east and necessitate the location of ports in the lowlands of the north and west.

Head-Hunters Kept Behind Electrified Fences

The mountains determine the location of one of the chief industries, camphor collecting. Formosa is the world's greatest natural camphor-producing area. In peacetime it contributed about 70 per cent of the world supply. Most of the camphor trees grow in the mountain districts.

Head-hunters add to the natural hazards of this region. These aborigines have presented a serious problem ever since the Japanese took possession of the island in 1895. Their head-collecting zeal discouraged immigration from Japan. Defying Japanese rule, they have cost their conquerors money as well as men. Jap measures to curb these mountaineers include a 360-mile fence of wire, electrified and regularly policed. Extra police are required to protect camphor workers.

Formosa's great variety of vegetation ranges from giant cedars and pines

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people (counting suburbs). The agricultural nation, however, has only two other cities of more than 100,000—Szeged and Debrecen, not counting Cluj (Kolozsvár) in Transylvania.

From 1920 until October, 1944, the head of the Hungarian state was Admiral Nicholas Horthy, ruling as regent of a kingdom with no king in sight. Another paradox is the regent's title of admiral, although the only navy of landlocked Hungary is a small river flotilla. The title is a hold-over from the old Austro-Hungarian navy which sailed the oceans before World War I, when Hungary had an Adriatic coast. Hungary was occupied by Nazi forces in March, 1944, but Horthy established himself as the nominal head of the government until his attempt to surrender.

Note: Hungary is shown on the National Geographic Society's Map of Central Europe and the Mediterranean.

Additional information on Hungary may be found in these articles in the *National Geographic Magazine:* "Sunday in Mezökövesd," April, 1935*; "Budapest, Twin City of the Danube," and "Hungary, A Kingdom without a King," June, 1932*; and "The Danube, Highway of Races," December, 1929.

The following issues contain series of natural color photographs of Hungary: "Rural Hungarian Rhapsody," 20 photographs, in the January, 1938*, issue of the *Magazine*, and "Rainbow Hues from Hungary," 27 photographs in the June, 1932*, issue.

Bulletin No. 2, November 6, 1944.

Rudolf Balogh

ANTIQUE SCYTHES, SICKLES, AND RAKES—MUSEUM PIECES ELSEWHERE—STILL WORK HARD IN HUNGARY

A high proportion of Hungary's area can be farmed; most of the rest is good for pasture. The nation has less waste land than any other European country its size. But the yield per acre is not always as great as in other countries, partly because of primitive methods of cultivation. Instead of the harvesting combine employed in the United States, hand implements are used in gathering Hungary's grain crop. Dozens of laborers, slowly and laboriously, day after day work on the harvest with implements that have scarcely changed in design since Biblical days. The men, swinging huge scythes (left), cut the grain. Women with sickles follow to glean stray stalks, to rake the stalks into heaps, then shock them. The work clothes make another contrast with the United States, where both men and women might don overalls to bring in the harvest; in Hungary everybody wears long skirts—men, women, and little girls.

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Cork's Role in American Life Important in War and Peace

AT LAST cork is popping back into some civilian uses, after an intensely active military career. Some of the restrictions on novelty uses of cork have just been removed.

Ask the average person to name a use for cork, and the answer probably will be "bottle stoppers." Once that was the dominant use, but now not much more than five per cent of the cork used in the United States goes to plug the necks of bottles. For the latest chapter in cork's history has been strictly military.

Because it is needed in making essential military equipment, cork in 1940 was placed on the "critical materials" list by the Army and Navy Munitions Board. It is used for cartridge plugs, bomb parts, insulation of planes and tanks, life preservers, and other essential equipment for both the Army and the Navy.

Trees Were a Military Objective

Cork oak trees have even been treated as military objectives. In 1941 British airmen unloaded incendiary bombs over cork oak forests in Sardinia, to keep the Axis countries from getting the material.

Cork comes from the outer layer of bark on an evergreen species of oak known botanically as *Quercus suber*. The tree resembles a live oak except that its leaves have toothed edges and its acorns are usually much longer and more pointed than those of the live oak. The trees grow from 30 to 60 feet high, and their trunks reach diameters of three feet and more; one tree in California reached a height of 75 feet and a diameter of 5 feet.

Cork oak trees are first stripped when they are 9 inches in diameter, or about 20 years old, and thereafter every nine or ten years during their life of approximately 150 years. The first two strippings produce cork which is of little commercial value. Later strippings bring the finest quality of cork.

The United States is the world's largest cork user. Before the war it imported over 150,000 tons annually, or 60 per cent of the world output. Various types of insulation used most of the cork in peacetime—for walls, floors, and ceilings in offices and homes; for cold storage and refrigeration plants; for refrigerators, boilers, and pipes. Large amounts also went into floor coverings, gaskets for engines, life jackets and rafts, and bottle stoppers. Thousands of tons were used for such miscellaneous articles as cigarette tips, baseball cores, penholder tips, fittings for laboratory equipment, decoy ducks, and mooring buoys.

Mediterranean Regions Supplied the World

Cork comes from regions around the Mediterranean which add up to an area about equal to that of the State of New Jersey. One narrow belt stretches for more than 1,000 miles along Africa's north coast. Large patches occur along 1,500 miles of coastline in southern Portugal, Spain, and France. Before the war the forests of Portugal, the most important source, yielded more than a quarter of the world's supply (illustration, next page). A few straggling cork oaks grow along the west coasts of Italy and Yugoslavia, while forests of considerable size thrive in Corsica, Sardinia, and Sicily.

The U. S. Forest Service, State departments of forestry, and local farm bureaus, cooperating with private industry, four years ago started a program to produce cork in the United States. More than 100,000 cork oak seedlings have

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growing on the cold slopes of the eastern mountains, to orchids and lilies in the steaming valleys between the mountains and the western coast. A strip along the west coast is a real rice bowl for Japan (illustration, below). It produces a rice of superior quality, furnishing one-sixth of Japan's total supply. There grow sweet potatoes; sugar cane which in prewar times kept many mills running to capacity; tropical fruits such as pineapples, bananas, and oranges. Farther inland are large tea plantations. Oolong tea is high on the list of Formosa's exports.

Mineral resources of the island include gold, silver, copper, sulphur, coal, and oil. A large refinery at Byoritsu, 55 miles southwest of Taihoku, processes the output of oil fields in the vicinity of the capital. Oil is also produced in the central region near Niitaka, the 12,959-foot peak which is higher than Mt. Fuji.

Along the west side of the island a railway extends from Kirun (Keelung)—chief port of the island and gate to Taihoku—to Takao, 229 miles southwest.

Taihoku had a prewar population of about 275,000. Other sizable cities are Taichu, in the rice-producing lowlands of the west; Tainan, second port of Formosa, with well over 120,000 people; and Takao, port for the southwestern area.

Several towns in the Takao area have been bombed by U. S. planes. Okayama, considered the most important spot on Formosa, served as a repair and supply base for Jap planes. Airfields and supply depots at Heito and Einansho were also bombed.

As a result of the Sino-Japanese War of 1894-95, Japan grabbed Formosa from China, which had held the island for some 200 years. Before the Chinese occupation, the Netherlanders, first Europeans to settle in Formosa, had built Fort Zealandia, near the present city of Tainan.

Note: Formosa is shown on the Society's Map of Southeast Asia, which was issued as a supplement to the October, 1944, *Magazine*.

Bulletin No. 3, November 6, 1944.

FORMOSA FARMS BY FOOT-POWER, IN TWO-FOOT AND FOUR-FOOT UNITS

Formosa's vast crops of rice and sugar cane, from which the demanding Japs drew much of their provisions, require a controlled water supply. In the hot, rainy lowlands of the western part of the island a foot-power pump raises the water from the ditch to the higher level of the field. This invention, introduced by a Spanish missionary, uses manpower, which is much cheaper than machinery on this far Pacific island. The quartet operating this four-coolie-power pump are shielded from the tropical sun by broadbrimmed, peaked sunshades which American women have copied and popularized as "coolie hats." The water buffalo (background), plowing the field in preparation for planting, is the typical work animal of the island.

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Geo-Graphic Brevities

Dr. Grosvenor Receives Educational Geography Award

DR. GILBERT GROSVENOR, President of the National Geographic Society and Editor of the *National Geographic Magazine*, has received the coveted Distinguished Service Award of the National Council of Geography Teachers, in recognition of his outstanding contributions to educational geography. The award was announced by Dr. S. S. Visher, Professor of Geography, Indiana University, and Chairman of the Council's Committee of Award.

In a citation accompanying the award, the Council lauded Dr. Grosvenor for his 45 years of skillful leadership in the field of educational geography as editor of the *Magazine* and his 25 years as President of the Society. Under his guidance, the citation pointed out, the Society became "not only the world's largest geographic society but the world's largest scientific organization." It has sponsored more than 100 scientific expeditions.

The citation commended Dr. Grosvenor's work in making the *National Geographic Magazine* "known and respected the world over." Under his editorship the *Magazine's* circulation increased from 900 copies to 1,250,000. Before the war severed communication lines, the *Geographic* reached members of the Society in every country, colony, and mandated area in the world. The citation referred to Dr. Grosvenor's having "broadened the interest of millions of people in the problems and beauties of other lands."

Dr. Grosvenor was commended also because "the succession of excellent maps that the Society has issued has had increasing significance; they (or enlargements of them) have contributed notably to Allied military plans and successes."

The Council's citation pronounced "distinctly valuable" the weekly Geographic School Bulletins, which originated under Dr. Grosvenor's guidance. The Society distributes these Bulletins to schools and libraries as a non-profit educational service. The Bulletins aid about 35,000 teachers in their geography classwork. Also mentioned in the citation were the News Bulletins contributed by the Society to 600 newspapers, to give news readers the geography behind the headlines.

* * * * *

Shale Oil a Rock-Frozen Asset

AS STUPENDOUS quantities of oil and gasoline are consumed in the war, what would happen if America's oil wells should run dry? The United States, according to some estimates, would still have 100 billion barrels of oil locked up in rock known as oil shale. Oil is obtained by crushing and heating the rock.

Experimentally, oil has been extracted from United States shale at a cost of about $1.25 a barrel. Also the U. S. Bureau of Mines has produced slightly inferior gasoline from shale oil for 8 cents a gallon.

Large quantities of oil shale are found in Colorado, Utah, and Wyoming. Three oil shale reserves for the U. S. Navy have been established in this area.

Scotland began extracting oil from shale 250 years ago. Commercial production began in the middle of the past century, when the growing scarcity of whales had boosted the price of whale oil, long used for lighting. By 1865 there were 65 shale oil plants. France had begun production of shale oil in 1838.

Meantime, Pennsylvania had begun to get petroleum from wells. Shale oil

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been planted in California and more than 250,000 in southern and southwestern States.

The idea of home-grown cork is not new. Thomas Jefferson tried unsuccessfuly for 40 years to establish the cork oak tree in the United States. In France in 1784 he saw the soil and climatic conditions under which the trees grew. He shipped some acorns to the United States, but they molded during the months at sea. His many other attempts to raise cork oaks from imported acorns failed.

In 1858, the U. S. Government made plantings of cork oak acorns imported from Spain. Most of these died from storms, insects, or lack of care, but a hunt through the southern States has located several large cork oaks of this 1858 planting. Efforts are being made to locate every cork tree in the United States.†

In 1904, the University of California made the first scientific approach to the problem by planting several acres at Chico. The first stripping was made in 1940, and the laboratories of two large American cork companies found that the California product was of excellent quality. Cork from oaks in the southern States has proved equally as good.

† Note: Any teacher or student who knows of the location of a cork tree may report it to the School Service of the National Geographic Society, Washington 6, D. C., and the information will be forwarded to the proper authorities.

Bulletin No. 4, November 6, 1944.

W. Robert Moore

FROM TRUNK TO TRUCK, CORK IS ON ITS WAY TO JOIN THE ARMY

These bundles of cork are being brought from their native cork oak forest in Portugal to the boiling station. There they will be processed into rectangular bales, convenient for shipping overseas. On arrival in the United States they will join the armed forces in the shape of cartridge plugs, wads for shell cases, bomb parts, and other war necessities. The trees are usually stripped in July and August. The bark is cut through around the base of the tree and just below where the large branches project. A longitudinal cut connects these encircling gashes, and the bark is then pried off with wedges. Great care is taken not to injure the under layer, which is to become the next cork crop. The strips are left to dry for a few days and then carried to the boiling station. After the boiling, the rough, woody outer coating is scraped off, the edges of the strips trimmed, and the cork, now pliable and elastic from the boiling process, is ready for baling.

had sold in New York City for a dollar a gallon; Pennsylvania's product never cost as much as fifty cents. Thereafter shale oil took a back seat.

Scottish shale now yields 18 to 45 gallons of oil from a ton of shale. Colorado shale averages over 44 gallons per ton, of which 95 per cent could be extracted.

Bulletin No. 5, November 6, 1944.

Melville Bell Grosvenor

DR. GROSVENOR SAILS THE WATERS THAT ARE MAPPED BY THE SOCIETY

The National Council of Geography Teachers has presented its Distinguished Service Award to Dr. Gilbert Grosvenor, President of the National Geographic Society. His determination to "humanize" geography developed from his own experience. He spent his childhood in Turkey, where the data which might make a dull geography lesson in the textbooks were vivid sights, strange personalities, exotic sounds and smells, and sharply changing temperatures. Before he was sixteen he had fulfilled the schoolboy's dream of adventure, several times crossing the Mediterranean and the Atlantic. He accompanied Donald B. MacMillan on part of the *Bowdoin's* 1925 voyage of exploration to northern Greenland. Later, with his wife, he flew across the Pacific, and found that they were the first couple to make the transpacific flight from San Francisco to Hong Kong. For summer relaxation Dr. Grosvenor mans the wheel of his 54-foot auxiliary yawl *Elsie*, in the waters off Nova Scotia. His young passenger is his grandson, Alexander Graham Bell Grosvenor. His summer home on Cape Breton Island stands near the site of the scientific laboratory of the late Alexander Graham Bell, father of Mrs. Grosvenor.

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